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(54) ELECTRONIC MAIL PROXY SERVER

(57) Abstract:

PROBLEM TO BE SOLVED: To perform processing of mails and reduction in communication cost, without changing already existing systems by making a proxy server interposed between a mail server and a mail client.

SOLUTION: An electronic mail epoxy server interposed between a mail server and a mail client for substituting for them by responding to information is able to transmit a mail acquisition request from the mail client to the mail server, to acquire a mail, to process the acquired mail, and to transmit the mail to the mail client.



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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the proxy server connected to the network, and the mail transmission method using it.

[0002]

[Description of the Prior Art] When a user uses e-mail, it is necessary to connect a mail server with a mail client. Usually, there are a method of connecting using a LAN line and a method of performing a dialup connection using a public line.

[0003] Usually, the e-mail service which an Internet Service Provider (henceforth a "provider") performs publishes ID and the password of a mail server in a provider to a user, and is provided in the form where the usage fee of a mail server is collected from a user.

[0004] On condition that it permits receiving the mail which the advertisement was inserted in the mail to receive or made the advertisement the subject, as for a user, the mail service which can acquire a mail account and can be used also exists for nothing.

[0005] As the contents, the E-mail can attach data files, such as not only a text but a picture, and a sound, to e-mail, and can transmit and receive them. In this case, since the data volume of the whole mail increases remarkably, time great at the time of transmission and reception is required, and it has the fault that communication cost starts too many.

[0006] Since it is difficult before reception to judge the contents when using an E-mail, increase of the communication cost resulting from reception of the mail which the addressee called spam mail does not desire poses a problem.

[0007] Destruction of the computer system resulting from having received the mail infected with the computer virus poses a problem.

[0008]

[Problem(s) to be Solved by the Invention] When a proxy server processes e-mail appropriately, this invention controls transfer of the unnecessary data between a mail server and a mail client, and an object of this invention is to reduce a user's communication cost.

[0009] Even when receiving e-mail using the mail client which has restriction in the numbers of characters and the receivable file sizes which can be displayed, such as a Personal Digital Assistant and a cellular phone, it aims at raising the readability of e-mail by performing processing according to a mail client.

[0010] It aims at preserving a user's computer from a computer virus by performing Safe Hex, before a mail client receives e-mail.

[0011] By making it possible to insert an advertisement in e-mail, and inserting an advertisement just before reception, without adding change to an existing mail server and mail client, The data volume of the mail which circulates a network top is controlled, and it aims at stopping the load of a mail server and a network.

[0012] In order to have carried out mail data processing same in the past, after once forwarding e-mail to the e-mail relay server and processing e-mail with the e-mail relay server, there was a method of transmitting processed data to the target mail server.

[0013] However, the principal mail box which saves the principal data before processing in the method concerned (it is also called a mail spool.) It is a file on the memory storage for saving mail data. Two mail boxes of the processed mail box which saves the data after processing will be held, It was inefficient and also it was inconvenience that the information synchronization between two mail boxes is difficult for while, the mail eliminated in the mail box remains in another mail box, and deleting operation is needed again etc.

[0014]

[The means for solving an invention] This invention intervenes between a mail server and a mail client, acquires the mail which a mail client requires from a mail server in the proxy server which performs the response substitute of information, and transmits to a mail client.

[0015] In the proxy server which intervenes between a mail server and a mail client and performs the response substitute of information, It has an authentication database which memorizes the user authentication information which consists of combination of ID and a password, and the e-mail method of communication of what kind of processing to perform to e-mail, It restricts to the time when certification information effective in the database concerned is registered, and the response substitute of the information between a mail server and a mail client is performed.

[0016] In the proxy server which intervenes between a mail server and a mail client and performs the response substitute of information, It has a virus database which memorizes the pattern file of a computer virus, After a proxy server removes a computer virus from the mail which investigated the existence of infection of a computer virus and has been infected with the computer virus to the mail acquired from the mail server, it transmits to a mail client.

[0017] In the proxy server which intervenes between a mail server and a mail client and performs the response substitute of information, It has an advertisement database which memorizes the text advertisement described in a plain text or HTML, and after a proxy server inserts arbitrary advertisements from an advertisement database into a mail text to the mail acquired from the mail server, it transmits to a mail client.

[0018] It intervenes between a mail server and a mail client, and in the proxy server which performs the response substitute of information, after a proxy server extracts only the arbitrary numbers of characters from a head to the mail acquired from the mail server, it transmits to a mail client.

[0019] it intervenes between a mail server and a mail client, and sets to the proxy server which performs the response substitute of information — a proxy server

deletes an attached file from the mail acquired from the mail server, and transmits to a mail client

[0020] In the proxy server which intervenes between a mail server and a mail client and performs the response substitute of information, the mail containing the character string registered beforehand is not transmitted to a mail client to the mail which the proxy server acquired from the mail server.

[0021]

[Embodiment of the Invention] The mimetic diagram showing the entire configuration of this invention is shown in drawing_1. According to this figure, it explains below.

[0022] The mail client 101, the proxy server 102, and the mail server 103 are connected to the Internet, respectively.

[0023] In addition, the proxy server 102 and the mail server 103 which exchange information closely are good, if connected by LAN (Local Area Network).

[0024] The proxy server 102 and the mail server 103 always exist as a pair of 1 to 1 logically (not being at a physical target). For example, when a mail server name is "pop.xaxon.co.jp", a proxy server name is set to "proxy.xaxon.co.jp."

[0025] However, there is no necessity that the proxy server 102 and the mail server 103 of this are 1 to 1 physically. It may exist as virtual Server Name of "proxy.xaxon.co.jp" which defines virtual Server Name and in which each of "proxy1.xaxon.co.jp(s)" and "proxy2.xaxon.co.jp(s)" exists really. Virtual Server Name may be similarly defined about the mail server.

[0026] Thus, the mechanism of defining virtual Server Name is called a virtual host, a virtual domain, a virtual domain, etc., and is generally used.

[0027] On the other hand, with the certification information (pair of ID and a password) of each mail client. The processing setting database (processing setting out DB) which saved the setup information (conditions (it explains in full detail in the example) etc. of the mail which carries out reception rejection of whether the existence of Safe Hex, the existence of advertising insertion, the number of characters to restrict, and an attached file are deleted) corresponding to each ID is connected to the proxy server 102.

[0028] In the gestalt of claim 4, the virus database (virus DB) 106 which stored the binary data pattern of computer virus (following virus) is connected to the proxy server 102.

[0029] In the gestalt of claim 5, the advertisement database (advertisement DB) which stored the text data of advertisement information is connected to the proxy server 102.

[0030] Next, an embodiment is described focusing on actual operation of this system. Drawing_4 is a flow chart about this operation.

[0031] When connected to the mail server 103 by the Internet course, LAN connection, or a dialup connection, the mail client 101, The information (principal data) on the mail box which the mail server 103 holds according to the usual mail protocol (communications protocol called POP and IMAP) is acquirable. (The conventional method)

[0032] On the other hand, in this invention, the mail client 101 is connected to the proxy server 102 by the Internet course, the LAN course, or a dialup connection.

[0033] The mail client 101 transmits certification information (pair of ID and a password) to the proxy server 103, and a proxy server transmits certification

information to the mail server 103 combined with self by 1 to 1 while saving the certification information concerned temporarily at own memory storage.

[0034]The mail server 103 considers that the proxy server 102 is a mail client, and returns the collated result of certification information to the proxy server 102 according to the usual mail protocol.

[0035]The proxy server 102 answers the mail client 101 in the end of attestation according to the usual mail protocol, when attestation has been approved, and when denied, it cuts connection with the mail client 101.

[0036]The mail client 101 will transmit an acquisition request to the proxy server 102 to arbitrary mails, if attestation is successful.

[0037]The proxy server 102 relays the acquisition request from a mail client, and transmits it to the mail server 103.

[0038]The mail server 103 transmits the mail data specified according to the acquisition request to the proxy server 102.

[0039]The proxy server 103 saves mail data temporarily at own memory storage.

[0040]The proxy server 103 searches the table record of ID in which processing setting-out DB105 corresponds by making into a keyword ID of the certification information saved temporarily at own memory storage.

[0041]From found setting out of a table record, mail data is processed based on setting out of the conditions of the mail which carries out reception rejection of whether the existence of Safe Hex, the existence of advertising insertion, the number of characters to restrict, and an attached file are deleted, etc., and it sends out to the mail client 101. (It explains in full detail in the example)

[0042]The feature of the above method from the mail client 101. Only by a connection destination changing from the mail server 101 (pop.xaxon.co.jp) to the proxy server 102 (proxy.xaxon.co.jp), Since communication is performed according to the usual mail protocol, the communication procedure itself is a point entirely of [in the change from a Prior art] needlessness (that is, the mail client based on a Prior art can be used) to the mail client 101.

[0043]The connection destination from the mail server 103 only changed from the mail client 101 to the proxy server 102, Since communication is performed according to the usual mail protocol, the communication procedure itself is a point entirely of [in the change from a Prior art] needlessness (that is, the mail server based on a Prior art can be used) to the mail server 103.

[0044]

[Example]Change of the setup information of the processing setting out DB is good to enable it to set up from a HTTP (HyperText Transfer Protocol) server with a WWW (World WideWeb) interface like drawing 2.

[0045]Since the existence of Safe Hex, the existence of advertising insertion, the existence of a character number limit and the number of characters and the existence of attached file deletion, the conditions of the mail which carries out reception rejection, etc. are mentioned about the setting detail of processing setting out, it describes about each below.

[0046]When "existence of Safe Hex" is set up for "checking" in processing setting out, The proxy server 102 performs collation of the virus data pattern stored in virus DB106, and the mail data concerned, when it agrees, deletes the portion which agreed and sends it out to the mail client 101.

[0047]Or the whole mail concerned is deleted and it may be made to send out only

the mail which wrote that a virus was detected to the mail client 101.

[0048]When "existence of advertising insertion" is set up for "inserting" in processing setting out, the proxy server 102 pulls out the advertisement text data stored in advertising DB104, and after inserting in the beginning of a sentence or the sentence end of e-mail, it sends it out to the mail client 101.

[0049]When "existence of the character number limit" is set up for "restricting" in processing setting out and "the number of restriction characters" is set as "500", the proxy server 102 sends out from the head of mail data to the place of 500 characters to the mail client 101, and discards after the 501st character. A whole sentence is sent out while it has been raw about mail of 500 or less characters.

[0050]the case where "existence of attached file deletion" is set up for "deleting" in processing setting out -- the inside of mail data -- an attached file (generally MIME is after the 2nd part of MIME a regular name showing the form of mail data.)

The data except Multipurpose Internet Mail Extension is sent out to the mail client 101.

[0051]When being set as "mail which carries out reception rejection" in processing setting out, saying "spam is included in To:", mail data, such as

"To:spam@xaxon.co.jp", are canceled in the proxy server 102, and it does not send out to the mail client 101.

[0052]

[Effect of the Invention]According to this invention, transfer of the unnecessary data between a mail server and a mail client can be controlled, and a user's communication cost can be reduced.

[0053]Even when receiving e-mail using mail clients, such as a Personal Digital Assistant in which the display function was restricted, it becomes possible to process e-mail to a form suitable for a mail client, and to receive.

[0054]Before a mail client receives e-mail, it becomes possible by performing Safe Hex to preserve a user's computer from a computer virus.

[0055]By making it possible to insert an advertisement in e-mail, and inserting an advertisement just before reception, without adding change to an existing mail server and mail client, The data volume of the mail which circulates a network top is controlled, and it becomes possible to stop the load of a mail server and a network.

[0056]

[Translation done.]

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CLAIMS

[Claim(s)]

[Claim 1] In a proxy server which intervenes between an e-mail client (henceforth a mail client), and an email server (henceforth a mail server), and performs a telephone answering service of information, A provision method and its device of proxy service which processes mail which received and acquired mail which a mail client requires from a mail server, and is characterized by transmitting to a mail client.

[Claim 2] A method according to claim 1 and its device characterized by comprising the following.

User authentication information which consists of an identifier (henceforth ID) of a lot, and combination of a password at least.

An authentication server which it has an authentication database which memorizes an e-mail processing method of what kind of processing to perform to e-mail, restricts to the time when certification information effective in the database concerned is registered, and can perform a response substitute of information between a mail server and a mail client.

[Claim 3] they are a method according to claim 2 and its device — a provision method of proxy service, wherein a user is able to change user authentication information memorized on an authentication database, and an e-mail processing method from on a WEB page which a proxy server provides, and its device.

[Claim 4]they are claim 1, a method given in 2, and its device — a virus database which memorizes a pattern file of computer virus (following virus), [have and] A proxy server investigates existence of virus infection to mail received from a mail server, A provision method and its device of proxy service deleting transmission or the whole mail concerned to a mail client, and transmitting only deletion notice mail to a mail client after carrying out a virus from mail infected by a virus.

[Claim 5]they are claim 1, a method given in 2, and its device — an advertisement database which memorizes a text advertisement described in a plain text or HTML, [have and] A provision method and its device of proxy service characterized by transmitting to a mail client after a proxy server inserts arbitrary advertisements from an advertisement database into a mail text to mail received from a mail server.

[Claim 6]they are claim 1, a method given in 2, and its device -- a provision method of proxy service characterized by transmitting to a mail client after a

proxy server extracts only the arbitrary numbers of characters from a head to mail acquired from a mail server, and its device.

[Claim 7]they are claim 1, a method given in 2, and its device — a provision method of proxy service which deletes an attached file from mail which a proxy server acquired from a mail server, and is characterized by transmitting to a mail client, and its device.

[Claim 8]they are claim 1, a method given in 2, and its device — a provision method of proxy service not transmitting mail containing a character string into which a proxy server was beforehand registered to mail acquired from a mail server to a mail client, and its device.

[Translation done.]

